REMARKS

Claims 6-22 were pending in the above-referenced application. Claims 6-19 are allowed, and claims 20-22 stand rejected. Claims 20 and 22 are amended herein, and new claim 23 is added.

Support for the amendments to claim 20 and claim 22 can be found, for example, in the specification on page 6 at lines 15, where it is outlined that the input into the demultiplexer, which, of course, is the output of the encoder is a "bitstream signal." As stated on page 6, line 22, the control signal, which controls the mixing unit (*i.e.*, the control signal indicating whether a passage of the encoded base band audio signal has a pulse-train-like character or not) is also included in the bitstream. Otherwise, it could not be extracted from the bitstream by the demultiplexer 701. Thus, the amendments in claims 20 and claims 22 are supported by the originally filed application.

New claim 23 is supported, for example, by the specification at page 6, lines 23 and 24. It is outlined there that the data and control signals sent in the bitstream (*i.e.*, included in the bitstream) are extracted using the multiplexer so that the envelope adjustment module 708 can be appropriately controlled. This naturally means that an encoder has to introduce these data and control signals into the bitstream. Otherwise, the multiplexer 701 would not be capable of extracting these data and control signals as outlined on page 6, lines 23 and 24 of the application as originally filed. Thus, new clcaim 23 is supported by the originally filed application.

The Examiner rejects claims 20-22 under 35 U.S.C. 102(b) as being anticipated by Minde. Applicant respectfully traverses this rejection. Applicant refers the Examiner to Fig. 1 of Minde, which the Examiner also references in the final Office Action. As stated in column 2, lines 18 and 19 of Minde, Fig. 1 illustrates a

typicaly analysis-by-synthesis linear predictive speech coder. Particularly, the input signal s(n) is encoded. To this end, for each frame, LPC analyzer 28 calculates filter coefficients. These filter coefficients are forwarded via dashed line to the filter 12 as outlined in column 3, lines 30 and 31. An excitation signal ex(n) is input into filter 12 for obtaining a filter output signal ŝ(n). This signal is input into subtractor 20 so that it can be substracted from the original signal s(n). Thus, the signal e(n) constitutes a coding error, since the signal ŝ(n) is similar to the decoder output signal as generated by the "synthesis part" of Fig. 1. Based on the error signal e(n), code book indices for the adaptive code book 14 and the fixed code book 16 as well as gain factors g_I and g_J are calculated. Particularly, these four parameters are calculated such that the error signal e(n) is minimized. This is outlined in column 3, lines 13 to 27 of Minde.

Please note that column 3, lines 42 to 45 says that the excitation which can be generated using code books 14 and 16 should be rich, i.e., should contain both pulse-like and noise-like components. This means that the code books have to include an excitation code (column 3, line 45, which has to include pulse-like and noise-like components). This excitation signal ex(n) is, however, <u>not</u> the audio signal but is only an excitation for the LPC synthesis filter 12 so that the output of the LPC synthesis filter 12 is a signal which is as close as possible to the original input signal s(n).

Therefore, the excitation signal ex(n), which may have noise-like components or pulse-like components is <u>not</u> the audio signal but is an excitation signal for the LPC synthesis filter. Thus, there is no clear link between a noise-like character or a pulse-like character of the excitation signal and a noise-like character or a pulse-like character of the original audio signal s(n). Instead, the excitation signal ex(n) is filtered via the LPC synthesis filter to obtain a synthesis signal ŝ(n). Having a pulse-like excitation signal does not mean that the original signal is a pulse-like signal. Instead, there could even be a situation in which there is a pulse-like original signal s(n) and a noise-like excitation signal or vice versa,

when the LPC filter coefficients generated by the LPC analyzer 28 are set accordingly.

The detecting step of method claim 20 and the associated means of claim 21 are clearly related to the detection whether the <u>audio signal</u> has a pulse-train-like character or a non-pulse-train-like character. As explained above, Minde fails to disclose this. Instead, Minde teaches that there is an excitation signal ex(n), which may be a pulse-like or non-pulse-like character. It is furthermore clear that this excitation signal is different from the "audio signal" as defined in claims 20 and 22.

Furthermore, the first paragraphs of claims 20 and 22 recite an audio signal which is encoded to obtain an <u>encoded</u> base band audio signal. In Minde, however, the excitation signal, which may be a pulse-like or a noise-like signal as outlined in column 3, line 43 is not encoded at all. Furthermore, this signal does not constitute an audio signal or even a base band audio signal but is simply an excitation signal for an LPC synthesis filter 12, which is different from original audio signal s(n) input into the Fig. 1 Minde encoder device.

Regarding the recited step of (and associated means for) associating a control signal to the encoded base band audio signal, Minde neither discloses an encoded base band audio signal nor discloses a step of associating a control signal to the encoded base band audio signal. Instead, the Fig. 1 encoder receives, in its synthesis part, a certain code book index for the adaptive code book or the fixed code book so that, for encoding a certain frame, a pulse-like or a noise-like excitation is retrieved from code books 14 and 16. However, there does not exist an "encoded base band audio signal". Thus, it is also not possible to associate the control signal such as a code book index to such an "encoded base band audio signal".

Finally, Minde is completely silent on the encoder output. Particularly, Minde does not disclose the step of forming a bitstream having the encoded base band signal and the control signal. Instead, the code book indices for the adaptive code book and the fixed code book are used during a synthesis within the encoder. Minde however, is completely silent on what is output and, particularly, how something is output if at all. Thus, Minde also does not disclose the step of forming a bitstream having the encoded base band signal and the control signal.

Regarding new claim 23, please be informed that Minde is completely silent on any encoder-related feature that data and control signals for an envelope adjustment in a decoder-side high frequency reconstruction are introduced into the output bitstream.

Refering to the Examiner's remarks in section 7 of the final office action, in Minde at column 3, lines 38 to 45, it is only outlined that an adaptive code book or fixed code book is to contain pulse-like and noise-like components. However, the components only form the excitation signal rather than the audio signal itself.

Furthermore, Applicant fails to understand how the LPC synthesis filter 12 in Fig. 1 could work as a detector, since this is simply a synthesis filter as outlined in column 3, line 4, which is set in accordance with LPC analyzer 28, and which receives a certain excitation to output a certain synthesis signal $\hat{s}(n)$. This element does not detect anything.

Additionally, the Examiner fully ignored the step of associating a control signal to an encoded base band audio signal. The Examiner failed to show where in Minde is a band audio signal, and which signal is associated to what. The Examiner only states:

"...., based on that determination signal is send to appropriate code book...."

Applicant can only assume that by this statement the Examiner might allude to code book index I or J selecting a pulse-like or noise-like excitation code as outlined in line 45. However, this code book index does not give any indication on the character of the original audio signal s(n) but only on the character of the excitation signal which has to be introduced into a specific synthesis filter 12 so that a certain synthesis signal is generated, which can be used for calculating a synthesis error e(n).

Finally, Minde is fully silent on the new feature that the encoded audio signal as well as the control signal are included in a bitstream which forms the output of the inventive encoder.

In view of the above, Minde does not anticipate or render obvious the subject matter of the present invention as defined in amended encoder-related claims 20 to 23.

Respectfully submitted,

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